## REMARKS

Claims 1, 3-16, and 19-24 stand rejected. Applicants request reconsideration in view of the following remarks.

## I. Claims 1, 3-8, 14-16, and 19-24 Rejected Under 35 U.S.C. § 103(a)

Claims 1, 3-8, 14-16, and 19-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,727,690 (the Hofmeister reference) in view of U.S. Patent No. 3,905,807 (the Jacobson reference).

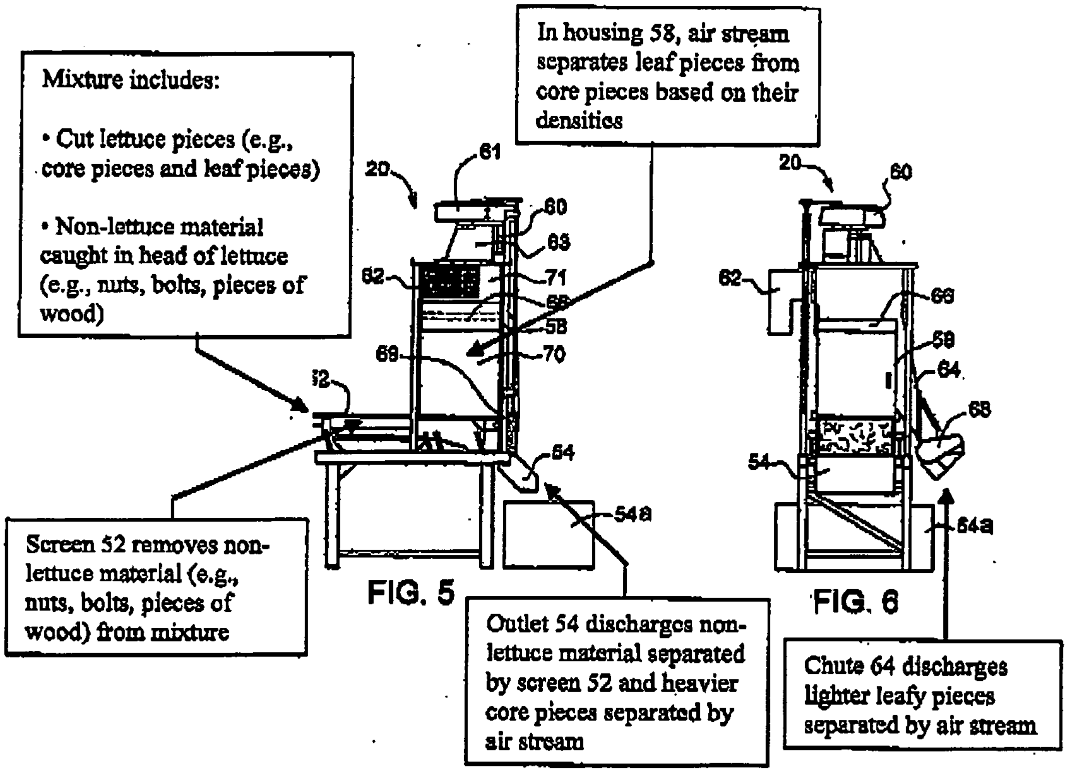
Applicants assert that the Examiner has failed to establish a *prima facie* case of obviousness because the Examiner's proposed combination requires modifying the principle of operation of the Hofmeister reference. MPEP 2143.02(VI) states, "[i]f the proposed modification or combination of the prior art would **change the principle of operation** of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims *prima facie* obvious." (Emphasis added.)

Claims 1 and 15 recite, in part: "one or more screens having a plurality of screen apertures, wherein the plurality of screen apertures have a shape and size suitable to **separate the core pieces from the mixture [of leaf pieces and core pieces] based on their dimensions**." Claim 16 recited, in part, "**separating core pieces from the mixture [of leaf pieces and core pieces] based on their dimensions using the one or more screens**."

In rejecting claims 1, 15, and 16 as being obvious, the Examiner proposes, "to modify the apparatus of Hofmeister to include the teachings of Jacobson so that sorting mechanism comprising one or more screens...so that core pieces of different shapes and dimensions could be separated from the mixture based on their dimensions."

As will be discussed in more detail below and as shown below in FIGs. 4 and 5, which have been annotated, the Hofmeister reference discloses using a vibrating screen 52 to separate non-lettuce material (e.g., nuts, bolts, pieces of wood, etc.) from lettuce pieces rather than separating core pieces from leafy pieces. Instead, the core pieces and leafy pieces are separated based on their

**densities using an air stream** in a vertical housing 58. In particular, the lighter leafy pieces are "airveyed" by the air stream, while the heavier core pieces drop down through the air stream. Thus, modifying device 20 to separate core pieces and leafy pieces **based on their dimensions using screens**, as proposed by the Examiner, changes the principle of operation of device 20 (i.e., to separate core pieces and leafy pieces **based on their densities using an air stream**.)



Mixture includes:

- Cut lettuce pieces (e.g., core pieces and leaf pieces)
- Non-lettuce material caught in head of lettuce (e.g., nuts, bolts, pieces of wood)

In housing 58, air stream separates leaf pieces from core pieces based on their densities

Screen 52 removes non-lettuce material (e.g., nuts, bolts, pieces of wood) from mixture

FIG. 5

Outlet 54 discharges non-lettuce material separated by screen 52 and heavier core pieces separated by air stream

FIG. 6

Chute 64 discharges lighter leafy pieces separated by air stream

## A. Stated Principle of Operation of Hofmeister Reference is to Separate Vegetable Pieces by Density

The preamble of claim 1 of the Hofmeister reference recites, "[a]n apparatus for separating **high density** vegetable pieces from **low density** vegetable pieces." [Emphasis added.] Column 2, lines 33-35 also states, "a gravity/air separation device including means to separate, **by density**, undesirable cut vegetable pieces from desirable cut vegetable pieces." Thus, the stated principle of operation of the Hofmeister reference is to separate cut vegetable pieces (e.g., lettuce pieces) **by density** rather than dimension.

## B. Screen 52 Separates Non-Lettuce Material (e.g., Nuts, Bolts, Pieces of Wood) from Mixture of Lettuce Pieces

As depicted in FIG. 4 of the Hofmeister reference, a head of lettuce is cut into pieces using a commercial cutter 16. (Column 3, lines 52-53.) The mixture is then transported to gravity/air separating device 20. (Column 3, lines 53-57.)

Hofmeister discloses, at column 4, line 26, that the gravity/air separation device 20 includes a vibrating screen 52. Underneath vibrating screen 52 is an outlet hopper 54a. Outlet hopper 54a collects the undesirable parts of the process, which includes two types of materials. One type of material is the undesirable heavy part of the lettuce. The second type of material is undesirable non-lettuce material, such as nuts, bolts, pieces of wood, etc.

In particular, column 4, line 31 states, "The outlet hopper 54a receives the cut out cores, hearts, ribs, and veins of the lettuce as well as other undesirable solids, such as nuts, bolts, pieces of wood and other types of material which have been found in the lettuce which have been picked up both form the field where the lettuce is grown as well as those solids which have been picked up during the transporting of the lettuce from the field to the processing plant."

Thus, the two types of waste found in outlet hopper 54a come from two distinct places. The undesirable lettuce material (i.e., cut out cores, hearts, ribs, and veins) is separated from the desirable lettuce material in the air stream separation device, where due to its density these core portions fall to the bottom. The non-lettuce material (i.e., nuts, bolts, pieces of wood, etc.) is separated from the lettuce mixture by vibrating screen 52.

In particular, column 4, line 28 states: "An outlet hopper 54a is disposed beneath the vibrating screen 52 to receive any undesirable heavy material which may be caught in the head of lettuce." First, it is unreasonable to conclude from this disclosure that the vibrating screen 52 separates core pieces because core pieces are not caught in a head of lettuce. Instead, the term "heavy material" in this cited portion refers to the non-lettuce material (i.e., nuts, bolts, pieces of wood, etc.) that can get caught in a head of lettuce during harvesting. Second, if the vibrating screen 52 was configured to separate core pieces from leaf pieces, there would be no need to use the air stream.

In essence, the cutting operation creates a mixture of leafy portions, core portions, and non-lettuce material. The vibrating screen 52 removes the non-lettuce material, which leaves a mixture of leafy and core portions. The air stream then separates the core portion from the desirable leafy portion based on their densities.

Therefore, the vibrating feed screen does not separate the core portions from the leaf portions. Instead, it separates the non-lettuce material from the mixture of core and leaf portions.

## C. Core Pieces and Leafy Pieces Separated Based on Their Densities Using Air Stream

As discussed above, vibrating screen 52 is used to separate out non-lettuce material from the mixture to leave only cut lettuce pieces. In housing 58, an air stream is then used to separate the core pieces and leaf pieces **based on their different densities**. (Column 4, lines 39-51.) In particular, the lighter leaf pieces are separated out of the mixture by the air stream and carried out of discharge chute 64. (Column 3, lines 6-13 and 58-66.) The heavier core pieces drop down out of discharge outlet 54 along with the non-lettuce material separated earlier by vibrating screen 52. (Column 3, lines 6-13 and 58-66.)

The Hofmeister reference details the densities of the various vegetable parts. For example, at column 1, line 67 to column 2, line 13, the Hofmeister reference discloses that "...the good leafy part of the lettuce will generally have a density of approximately 0.8....the core will generally have an approximate density of 1.2....the heavy rib will have an approximate density of 1.1....the heart will have an approximate density of 1.0...".

Because the Hofmeister discloses separating core pieces and leafy pieces based on their densities using an air stream, Applicants assert that the Examiner's proposed modification to use screens to separate core pieces and leafy pieces based on their dimensions would change the principle of operation of the gravity/air separating device 20 disclosed in the Hofmeister reference. Additionally, because the vibrating screen 52 in device 20 is used to separate out non-lettuce material (nuts, bolts, pieces of wood, etc.) from lettuce material (e.g., core pieces and leafy pieces), Applicants assert that the Hofmeister reference teaches away from using screens to separate core pieces and leafy pieces.

Thus, Applicants assert that claims 1, 15, and 16 are allowable over the Examiner's proposed combination of the Hofmeister reference and the Jacobson reference. Additionally, Applicants assert that claims 3-8, 14, 19-24 are allowable for at least the reason that they depend from allowable independent claims.

## II. Claims 9-13 Rejected Under 35 U.S.C. § 103(a)

Claims 9-13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Hofmeister reference in view of the Jacobson reference an din further view of U.S. Patent No. 6,637,600 (the Miyamoto reference). Applicants assert that claims 9-13 are allowable for at least the reason that they depend from an allowable independent claim.

## III. Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 145642000100. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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